DaimlerChrysler AG

Patent claims

1. A drive system for an off-road utility vehicle, having at least one rear axle (5), which can be permanently driven from a drive engine (3) via a speed-change gearbox (4), and a front axle (6) which is operatively connected to the rear axle (5) by an axle engagement clutch (AZK), and in which the axle engagement clutch (AZK) is generally controlled manually for engagement and disengagement, characterized in that the engagement of the axle engagement clutch (AZK) can additionally be initiated automatically as a function of the engine load (M).

2. The drive system as claimed in patent claim 1, characterized in that the automatic engagement of the axle engagement clutch (AZK) is blocked at an engine load (M) less than a threshold value (SW) which is related to a defined fraction of the maximum engine torque (M_m) of the drive engine (3).

3. The drive system as claimed in patent claim 2, characterized in that the defined fraction lies within a value range of between 60% and 90% of the maximum engine torque (M_m) of the drive engine (3).

4. The drive system as claimed in patent claim 3, characterized in that the defined fraction is about 75% of the maximum engine torque (M_m) of the drive engine (3).

5. The drive system as claimed in one of patent claims 2 to 4, characterized in that the automatic engagement of the axle engagement clutch (AZK) is

blocked during a predetermined time interval (TV) starting from the point at which the threshold value (SW) is reached.

6. The drive system as claimed in one of patent claims 1 to 5, characterized in that the automatic engagement of the axle engagement clutch (AZK) can be overridden manually.

7. The drive system as claimed in one of patent claims 1 to 6, characterized in that the automatic engagement of the axle engagement clutch (AZK) can be overridden as a function of a closed-loop and/or open-loop control system (ADM and/or ABS and/or EPS and/or ESC) influencing the driving state.

8. The drive system as claimed in one of patent claims 1 to 7, characterized in that the engagement of the axle engagement clutch (AZK) can be additionally and automatically initiated by a parameter which depends on the slip state of the rear axle (5) of the utility vehicle.